

## WHAT IS CLAIMED IS:

- 1 1. A method comprising:  
2 using a computer having a graphical user interface;  
3 defining at least one function within a graphical representation of a finite state machine;  
4 representing the at least one function graphically;  
5 calling the graphical function in a modeling system.
- 1 2. The method of claim 1 wherein the defining step comprises using a function block.
- 1 3. The method of claim 2 wherein the defining step further comprises using a function  
2 prototype.
- 1 4. The method of claim 1 wherein the defining step further comprises using a function flow  
2 diagram.
- 1 5. The method of claim 4 wherein the representation of the function comprises a diagram  
2 comprising graphical elements.
- 1 6. The method of claim 1 wherein the simulation system comprises means for graphical  
2 diagramming.
- 1 7. A system comprising:  
2 a computer comprising a graphical user interface, memory, storage, and at least one input  
3 device;  
4 a computer program residing on computer readable media having instructions to cause  
5 the computer to:  
6 receive user input defining at least one graphical function;  
7 receive user input to use the at least one graphical function in a simulation.

1 8. The system of claim 7 wherein the user input defining the at least one graphical function  
2 is entered into a function block.

1 9. The system of claim 8 wherein the user input defining the at least one graphical function  
2 includes a function prototype.

1 10. The system of claim 7 wherein the user input comprises a function flow diagram.

1 11. The system of claim 10 wherein the flow diagram is comprised of graphical elements.

1 12 A computer program product, stored in a computer readable medium, comprising  
2 instructions to cause a computer to:  
3 receive user input defining at least one graphical function;  
4 receive user input to use the at least one graphical function in a simulation.

1 13. The computer program product of claim 12 wherein the user input defining the at least  
2 one graphical function is entered into a function block.

1 14 The computer program product of claim 12 wherein the user input defining the at least  
2 one graphical function includes a function prototype.

1 15 The computer program product of claim 12 wherein the user input comprises a function  
2 flow diagram.

1 16. The computer program product of claim 12 wherein the function flow diagram is a  
2 comprised of graphical elements.

1 17. A system for modeling finite state machines comprising:  
2 a computer comprising a graphical user interface, memory, storage, and at least one input device;  
3 means to receive user input to define at least one graphical function;  
4 means to represent the function in a state flow diagram;

5 means to use the graphical function in a simulation of at least one finite state machine.

1 18. The system of claim 17 wherein the user input defining the at least one graphical function is  
2 entered into a function block.

1 19. The system of claim 17 wherein the system further comprises means for simulating at least  
2 one finite state machine.

1 20. The system of claim 17 wherein the user input defining the at least one graphical function  
2 includes a function prototype.

1 21. The system of claim 17 wherein the user input comprises a function flow diagram.

1 22. The system of claim 10 wherein the flow diagram is comprised of graphical elements.

1 23. The method of claim 5 further comprising the ability to hide the display of the flow  
2 diagram based upon user input.

1 24. A method of operating a data processing system having a graphical user interface  
2 comprising:  
3 using the graphical user interface to create a graphical representation of a finite state  
4 machine including a graphical representation of a function;  
5 emulating the represented finite state machine.

1 25 The method of claim 24 wherein the graphical representation of the function comprises a  
2 function prototype.